

REMARKS

The Examiner is thanked for the careful examination of the application. However, in view of the following remarks, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections. In response to the rejections, independent claims 1 and 3 are amended, and new claims 7 - 10 are added.

Support for the amendments may be found in the fact that the specification provides that there is a heater in the partitioning section. In preferred embodiments, the heater is heated to 100° C to 300° C. Accordingly, the spiral shield must inherently be capable of withstanding high temperatures. Furthermore, in the context of the application, one of ordinary skill in the art would readily know what temperatures the spiral shield must be capable of withstanding.

With regard to the new claims 7 and 8, see in Figure 1, a "fixing part 22" is mounted to the wall of the vacuum vessel and protrudes into the interior of the chamber. The partitioning plate is screwed to the underside or "lower face" of the fixing plate 22. See also Figure 3a and paragraphs [0042] and [0048].

35 USC 112:

The examiner alleges that the specification does not indicate that the outer perimeter of the partitioning section does not directly contact the vacuum vessel. However, this language has now been deleted.

Art Rejections:

The present application includes four rejections based on 35 U.S.C. §103(a). Each of the rejections relies on a "first reference" to teach the basic vacuum vessel

with a partitioning section. For the four rejections, the "first reference" is *Xu* (USPP 2001/0042512), *Ko* (USP 6,427,623), *Tanaka* (USPP 2002/0152960), and *Yuda* (USP 6,663,715), respectively. Applicant reserves the right to predate one or more of the four references at a later time, if necessary and appropriate.

For each of the four rejections, the Examiner has added the teachings of *Kasai* (USP 6,436,193), *Long* (USPP 2003/0079983) and *Donohoe* (USP 6,132,552).

The Examiner relies upon *Kasai* for an alleged teaching that showerheads can be heated. With regard to *Kasai et al.* the Examiner has relied upon a statement that generically states:

The showerhead 8 has a heating mechanism and a cooling mechanism as inner units (not shown). When CVD reaction gas is delivered to the interior of the shower head 8, the temperature in the shower head 8 is controlled so that it is lower than the reaction temperature and higher than the liquefying temperature of components of the CVD reaction gas.

Column 10, lines 12-18. However, this portion of *Kasai* describes heating elements in a shower head that is significantly different from that of the claimed invention. The shower head described in *Kasai et al.* is a thermal CVD apparatus, with no electrode in the first chamber, which is less complex than the plasma CVD apparatus shower head described in the primary references. Thus, *Kasai et al.* is not analogous prior art for the purpose of analyzing the subject matter at issue. One skilled in the art would not rely upon a generic statement about a thermal CVD apparatus shower head when seeking improvement for a plasma CVD apparatus shower head.

Moreover, a generic statement that the shower head has a heating mechanism does not teach or suggest the claimed heater for the electrically

conductive **partitioning section**, which is a much more specific part of the apparatus than the shower head. There is different rational and use for a heater specifically for the partitioning section than for the shower head in general.

Moreover, the Examiner asserts that the motivation for adding a heater to the partitioning section as allegedly taught by *Kasai et al.* is to control the temperature of the processing gas to prevent condensation of the processing gas or heat the processing gas to the desired temperature prior to the gas entering the processing vessel. For the thermal CVD apparatus of *Kasai et al.* such motivation may be present, however, such motivation does not translate to the **plasma** CVD apparatuses of *Xu et al.*, *Ko*, *Tanaka et al.*, and *Yuda et al.* or the present invention. Therefore, *Kasai et al.* does not teach or suggest the heater for heating the electrically conductive partitioning section of claims 1 and 3.

The Examiner also relies upon *Long* for an alleged teaching of a spiral shield comprising an inner rubber seal encircled by a spiral conductor to seal areas of the chamber and maintain a good electrical contact, citing paragraph 90 and Figure 18a.

In response to the rejections, independent claims 1 and 3 have been amended to clarify that the electrically conductive spiral shield that is able to withstand high temperatures. Since the *Long* spiral shield has an inner rubber seal (paragraph [0091]), it is clear that the *Long* spiral shield would not withstand temperatures of up to 100° C. Specifically, *Long* merely describes the spiral shield as comprising an inner rubber seal encircled by a spiral conductor. Given that *Long* provides minimal information about the nature and location of the spiral shield, there is no teaching in *Long* that the spiral shield mentioned therein would be able to

withstand high temperatures. Accordingly, *Long* does not teach or suggest the spiral shield as presently claimed.

Furthermore, *Long* does not teach or suggest placing the spiral shield in the locations defined in claims 1 and 3 of the present application.

The examiner relies upon *Donohoe* merely for its teaching of a small space formed by the o-ring 134 above the gas distribution plate 128. The examiner alleges that the motivation for using the *conductive* spiral shield to prevent contact between the vacuum vessel and the conductive partition is to provide an alternative and equivalent mounting technique to mount the conductive partition to the vacuum vessel of the primary reference. However, there is no teaching in *Donohoe* that the o-ring is conductive. Furthermore, such arguments are no longer relevant in view of the amendments to the claims.

In view of the foregoing amendments and remarks, the Examiner is respectfully encouraged to reconsider and withdraw the outstanding rejection of claims 1 and 3 - 6 based on 35 U.S.C. §103(a) and to allow new claims 7 - 10.

The application also includes rejections based on the judicially created doctrine of obviousness type double patenting. Such rejections also rely upon *Kasai*, *Long* and *Donohoe* in the same manner as the rejections based on 35 U.S.C. §103(a). Accordingly, Applicant submits that the double patenting rejections are also overcome by the foregoing amendments and remarks.


In view of the foregoing amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections.

In the event that there are any questions concerning this response, or the application is general, the Examiner respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.

Respectfully submitted,

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